38th Annual Meeting, APS Division of Plasma Physics
11-15 November 1996, Denver, CO
Abstract Submittal Form

Deadline: Wednesday, 10 July 1996

Subject Classification Category 4.7 ☐ Theory ☒ Experiment
(Refer to the DPP Subject Category list on page M19.)

UCRL-JC-124675 Abs

Long Duration Indirect-Drive Experiments at Nova*, O.L. Landen, J.A. Hammer, L.J. Suter, T.J. Orzechowski, T. Weiland, T.S. Perry, J. Bauer, D. Bach, R. Ward, B.A. Hammel, J.D. Kilkenny, and R.J. Wallace, LLNL, Livermore, CA 94550. For laser-driven hohlraums, certain classes of radiation-hydrodynamic phenomena such as diffusive radiation transport and hydrodynamic instability growth scale favorably with longer x-ray drives. Hence a campaign to design, characterize and use longer (5-20 ns), near-constant temperature x-ray drives has begun at the Nova laser facility. The long drives are created by staggering laser beams to maximize the extractable 3ω laser energy. Time-resolved radiation temperatures between 75 and 100 eV have been demonstrated in up to 5 mm diameter hohlraums with only 2 TW input laser power. The temperatures, after correcting for diagnostic hole closure as monitored by soft x-ray gated imagers, equal or exceed simple analytic estimates. 15 ns duration x-ray drives have then been used to observe radiation transport along empty tubes and in gasses. Present results are also used to normalize simple scaling laws predicting future capabilities on larger lasers such as the HELEN Upgrade and NIF. *Work performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under contract number W-7405-ENG-48.

☐ Prefer Poster Session
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☐ Place in the following grouping:
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A faxed copy is NOT acceptable. This form, or a computer-generated form, plus ONE COPY, must be received by **Wednesday, 10 July 1996** at the following address.

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The American Physical Society
One Physics Ellipse
College Park, MD 20740-3844
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